

Associate Laboratory Director Jim Lake retires

By Kimberly Hirai, University of Idaho, Idaho National Laboratory Nuclear Science and Technology communications summer intern

Jim Lake knows a thing or two about nuclear energy. With a nuclear science and engineering career that spans more than 30 years, his experiences and achievements could fit comfortably in a book.

But even as he retires from Idaho National Laboratory, you won't find INL's Associate Laboratory Director for Nuclear Programs focusing on past accomplishments - he's always been more interested in talking about the future of nuclear energy and engineering. Lake's fascination with the fields began early and was well-nourished by his faithful reading of Scientific American through high school and college.

In his 23-year career with INL, Lake has seen the ups and downs of nuclear technology, from its disfavored years following the Three Mile Island mishap to its 21st century reawakening. Lake considers his work during that time to be among his greatest career accomplishments. He was also president of the American Nuclear Society during that time, serving a one-year term from June 2000 to June 2001.

A teen when the first moon landing occurred, Lake explored physics and nuclear engineering during his post-secondary education. He began at Hanover College, a liberal arts school in southern Indiana.

Lake went on to finish a master's degree in physics at Miami University of Ohio. He wasted no time delving into the world of nuclear energy upon graduation, earning an Atomic Energy Commission fellowship to Georgia Institute of Technology. Lake completed both his master's and Ph.D. degrees in nuclear engineering there in 1973.

Upon graduation, Lake contributed to nuclear history with his technical work on the Clinch River liquid-metal fast breeder reactor. The first of its kind, the reactor would produce more fuel than it consumed. Lake joined the project as a nuclear design engineer for Westinghouse's Advanced Reactors Division. His technical skill and guidance allowed the team to save the project with an innovative "heterogeneous" core design. The project had encountered difficulties meeting regulatory requirements with the previous core design. Lake also developed a data technique to calculate uncertainty in design parameters that colleagues nationwide later accepted.

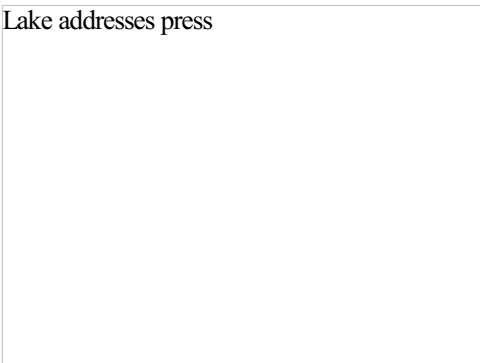
The project was cancelled in 1983, but that and future setbacks didn't stop Lake from furthering his personal nuclear agenda.

He arrived at the Idaho National Engineering Laboratory when nuclear energy was on the backburner. The Three Mile Island accident had created a negative rift in American public opinion. Plants planned for construction in the 1970s faced financial roadblocks in the 1980s.

"That set the nuclear industry back severely in the United States," said Lake. "So nuclear power in 1984 was not a popular option when I came here."

Despite the unpopularity, Lake persevered. He began work at the Idaho National Engineering Laboratory in November 1984 as manager of the Reactor Physics Branch. Less than two years later, Lake obtained a new position as nuclear engineering group manager, and continued research on reactor core conceptual design. He quickly moved up the company ladder and worked as research and development director of INEL Advanced Nuclear Energy until becoming ANS president.

Lake's work between 1997 and 2001 reintroduced the United States to nuclear power. He became associate laboratory director for nuclear energy in 2000 under Bechtel BWXT Idaho. He also became president of ANS in June that same year. The timing was just right.



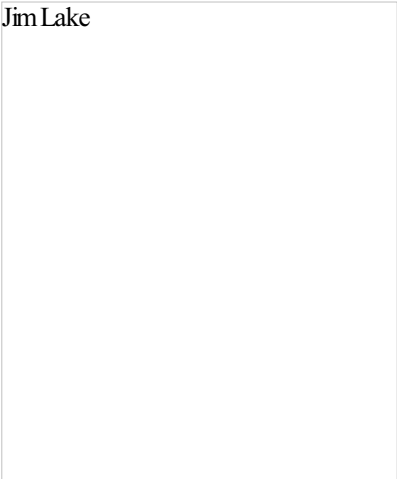
Lake addresses press

"That happened to be the time that America was beginning to awaken to nuclear energy possibilities for the future," said Lake.

He played a strong hand in the "reawakening" and the steps leading up to the United States' reconsideration of nuclear energy. His first challenge was to resurrect the nuclear program within DOE. The Clinton Administration had allocated little support for nuclear research and development programs. Use of fossil fuels in the 1990s also overshadowed a nuclear renaissance.

"I don't think we realized what we were doing to the environment with coal burning at that time," said Lake. "Fossil fuel prices were quite a bit cheaper then, and nuclear had a very difficult time competing."

Lake rose to the challenge. He and colleagues from six other national laboratories provided strong justifications pertaining to use of nuclear energy in national laboratories and in the country's defense mission to encourage greater focus on R&D programs. Their work led to the development of the Nuclear Energy Research Initiative by the President's Council of Advisors on Science and Technology.



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At the same time Lake was demonstrating the importance of establishing nuclear R&D programs, he was also helping to establish nuclear policy. Recently influenced by New Mexico Sen. Pete Domenici's October 1997 "new nuclear paradigm" address to Harvard University, Lake saw the need for a national nuclear plan. But Domenici's speech lacked detail about how to set a nuclear energy agenda.

"What INEEL put together was the roadmap for how to do it," said Lake.

In a one-day Decision-Makers' Forum in Washington, D.C., involving about 60 government, national laboratory, industry and university representatives, participants developed nuclear technology ideas to set a new nuclear energy national agenda in June 1998.

The two events - INEEL's push toward expanding DOE nuclear R&D programs and the Decision-Makers' Forum in 1998 - etched a place for the lab within the nuclear energy realm. Now on the map, a series of escalations in the lab's status would lead to the merging of the nation's two primary nuclear energy labs, INEEL and Argonne National Laboratory-West, in 2005.

But despite Lake's work and industrywide advances in safety and cost effectiveness, public awareness of nuclear energy remained limited at the turn of the century. Few politicians or the public recognized the industry's progress. But the energy crisis of 2001 allowed Lake to escort nuclear energy into the new millennium.

"So I took full advantage of the opportunity to write magazine and newspaper articles about nuclear energy, to participate in television interviews, and to visit congressional and government offices as well as to travel around the country and access the world as the ANS president," he said.

National and international news agencies began to look at nuclear energy and its possibilities. The new attention gave Lake the chance to return to his high school and college days of Scientific American and fulfill a boyhood dream.

"Rising electricity prices and last summer's rolling blackouts in California have focused fresh attention on nuclear power's key role in keeping America's lights on," Lake wrote in the January 2002 edition of Scientific American.

Lake co-wrote the article with INEEL's Ralph Bennett and John Kotek, then Generation IV and Nuclear-Hydrogen Programs Manager for Argonne National Laboratory-West. The story detailed prevailing nuclear themes and the promise of Generation IV nuclear power. The opportunity gave Lake the chance to tell America the story of nuclear energy.

"Clearly, the time seems right to reconsider the future of nuclear power," Lake and his colleagues wrote. Lake believes it is.

"You don't live in the past. You have to live in the future, and the future still presents some substantial challenges," he said of nuclear technological advancement. "It's those challenges that provide us with the strong personal and organizational motivation to perform to our mission needs and also it provides the mental rewards that we as scientists and engineers really need to keep us going."

Despite his formal INL retirement, it's a safe bet that Lake's lifelong need to confront those challenges will keep him going for years to come.

[Read](#) the congressional record entry acknowledging Lake's retirement. (9kB PDF)

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